

Appl. No. 10/672,084
Amdt. Dated Dec. 9, 2005
Reply to Office Action of Sep. 9, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (currently amended): An extender for use between two connectors, comprising:

a frame having a body portion and two receiving ports at opposite ends thereof adapted for respectively receiving said two connectors, the frame comprising two side portions on opposite sides of the body portion, each side portion having two receiving sections at opposite ends thereof, the pair of receiving sections at the same end of the frame defining said receiving port, each receiving section having a pair of mounting legs provided at opposite sides thereof for being mounted on a printed circuit board; and

a circuit board attached to the body portion of the frame, the circuit board having conductive traces disposed along at least one side thereof and opposite end portions respectively extending into the two receiving ports of the frame.

Claim 2 (original): The extender as described in claim 1, wherein the two receiving ports of the frame are substantially identical.

Claim 3 (cancelled)

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Claim 4 (currently amended): The extender as described in claim 31, wherein the circuit board comprises a pair of shoulders on opposite sides of each end portion, each shoulder abutting against the bottom of a corresponding receiving section of the frame.

Claim 5 (currently amended): The extender as described in claim 31, wherein a protrusion is provided in each receiving section of the frame adapted for engagement with a corresponding groove of said connector.

Claim 6 (cancelled)

Claim 7 (original): The extender as described in claim 1, wherein the conductive traces of the circuit board include a plurality of signal traces and ground traces respectively disposed on opposite sides of the circuit board.

Claim 8 (original): The extender as described in claim 7, further comprising a second circuit board identical to said circuit board, said circuit board and said second circuit board being respectively attached to opposite sides of the body portion of the frame.

Claim 9 (original): The extender as described in claim 8, wherein said circuit board and said second circuit board are respectively attached to opposite sides of the body portion of the frame in such a manner that the signal traces thereof are outwardly exposed.

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Claims 10 (original): An electrical device for electrically interconnecting two printed circuit boards (PCB), comprising:

a first and a second connectors adapted for being respectively mounted on said two PCBs, the first and second connectors having respective first and second contacts received therein, the first and second contacts having a plurality of signal contacts arranged in two outer rows and a plurality of grounding contacts arranged in two inner rows, the ground contacts having tail portions in a same cross-section of said connector abutting against each other; and

an extender located between the first and second connectors, the extender comprising a frame, ~~and a circuit board attached to the frame and~~ a second circuit board identical to said circuit board, the circuit board and the second circuit board respectively attached to opposite sides of the frame, the frame defining two receiving ports at opposite ends thereof for respectively receiving the first and second connectors therein, the circuit board having conductive traces disposed along at least one side thereof and opposite end portions respectively extending into the two receiving ports of the frame, the conductive traces comprising a plurality of signal traces and ground traces respectively disposed on opposite sides of the circuit board, whereby upon the insertion of the first and second connectors into corresponding receiving ports of the frame, the conductive traces of the circuit board electrically connect with corresponding first and second contacts of the first and second connectors at opposite ends thereof.

Claim 11 (original): The electrical device as described in claim 10, wherein the first and second connectors are identical.

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Claim 12 (original): The electrical device as described in claim 11, wherein the frame of the extender includes a body portion and a pair of side portions, each side portion having two substantially identical receiving sections at opposite ends thereof, the pair of receiving sections at the same end of the frame defining said receiving port.

Claim 13 (original): The electrical device as described in claim 12, wherein the circuit board comprises a pair of shoulders on opposite sides of each end portion, each shoulder abutting against the bottom of a corresponding receiving section of the frame.

Claim 14 (original): The electrical device as described in claim 10, wherein a protrusion is provided in each receiving port of the frame, and each connector defines a groove for engagement with a corresponding protrusion.

Claim 15 (cancelled)

Claim 16 (cancelled)

Claim 17 (cancelled)

Claim 18 (previously presented): An electrical system comprising:
a first printed circuit board (PCB);
a second PCB parallel to the first PCB;

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a first connector mounted on the first PCB, the first connector having a first slot and a plurality of first contacts disposed proximate to the first slot;

a second connector mounted on the second PCB, the second connector having a second slot and a plurality of second contacts disposed proximate to the second slot; and

an extender located between the first and second connectors, the extender comprising a frame and a circuit board attached to the frame, the frame defining two receiving ports at opposite ends thereof for respectively receiving the first and second connectors therein, the circuit board having opposite end portions respectively extending into the first and second slots of the first and second connectors to allow conductive traces disposed thereon to electrically connect with corresponding first and second contacts of the first and second connectors.

Claim 19 (original): The system as described in claim 18, wherein at least one end of said extender is attached to one of said first and second PCBs.

Claims 20 (previously presented): An electrical connection system comprising:

an insulative housing defining two parallel slots along a longitudinal direction thereof;

two rows of passageways located by two sides of each of said slots;

inner and outer rows of contacts disposed in the corresponding passageways, respectively, by two sides of each of said slots;

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the contacts disposed in one inner row and those corresponding ones in another inner row being mechanically and electrically engaged with each other in a transverse direction perpendicular to said longitudinal direction;

two spaced circuit boards respectively downwardly inserted into the corresponding slots and electrically and mechanically engaged with the corresponding contacts; wherein

each of said circuit boards includes an outer face outwardly exposed to an exterior in said transverse direction, and an inner face supportably abutting against a body portion of a frame, said body portion being sandwiched between said two circuit boards; wherein

said frame is fastened to another printed circuit board on which the housing is mounted.

Claim 21 (cancelled)